



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
LANSING

KIRK T. STEUDLE
DIRECTOR

September 30, 2008

The Honorable Bill Hardiman, Chair
Senate Appropriations Subcommittee
on Transportation
Michigan State Senate
P.O. Box 30036
Lansing, Michigan 48909

The Honorable Lee Gonzales, Chair
House Appropriations Subcommittee
on Transportation
Michigan House of Representatives
P.O. Box 30014
Lansing, Michigan 48909

Dear Senator Hardiman and Representative Gonzales:

Pursuant to Section 264 of 2007 PA 129, enclosed is the Michigan Department of Transportation's report on the progress made toward increased efficiencies in department programs.

If you have any questions, please contact either me or Myron Frierson, Bureau Director, Finance and Administration, at (517) 373-2117.

Sincerely,

Kirk T. Steudle
Director

Enclosure

cc: Senate & House Appropriations
Subcommittees on Transportation
B. Emerson, State Budget Director
D. Hollon, Senate Fiscal Agency
B. Hamilton, House Fiscal Agency

The Michigan Spatial Reference Network (MSRN)

The Michigan Department of Transportation (MDOT) continues to focus on reducing costs and improving efficiencies through technology. The use of the MSRN reduces surveying hours and provides high quality, real time data.

The MSRN is a network of permanently installed, continuously operating ground based global positioning system (GPS) receivers. The network of receivers continuously streams GPS satellite data to a central server in Lansing. The data is verified for correctness (integrity monitoring), archived and made available to users via MDOT's Web site. The system decreases the amount of ground control surveying and reduces the amount of equipment and operators in the field. The data is available to the public as a public service at no cost.

The MSRN also includes real time data correction via wireless connection to our Real Time Kinematic (RTK) servers. RTK survey is the process of using GPS base stations that occupy a known point to broadcast a correction value (difference between the known position and the GPS computed position) via radio link to the GPS rovers. The result is corrected (very accurate) GPS coordinate values in real time as the surveyor walks around with the rover. Surveyors can link to the continuously operating reference station (CORS) server to receive the correction via a wireless modem. Hence, surveyors in the field no longer have to set up local bases to broadcast RTK corrections or support expensive radios. What this allows the surveyor to do is pull up to a project (after setting the appropriate traffic control measures), pull out the GPS rover equipment and, within minutes, begin accurately mapping the topography as opposed to spending the first and last hour of each work day setting out base stations on known control points. In addition, the CORS are static and are not subject to change in position due to set-up error or other random systematic errors that naturally occur in dynamic survey scenarios.

Trunkline Photolog Images

Another improvement to MDOT's highway program is the use of portable photolog data which allows MDOT to utilize existing photos of all state trunklines in regional offices statewide. The photolog itself is a series of sequential photographs taken from a moving vehicle at approximately the driver's eye level. The images provide a permanent visual record of the highway and roadside at the time the photograph was taken. Each photograph shows features such as number of lanes, pavement type and condition, markings, signs, structures, and other highway elements in true perspective. The goal of the department was to disseminate existing photolog data out to the regional offices with minimal cost and maximum ease of use. This information is shared through the network while at the office and also makes the entire log portable for visual aids in public meetings with contractors, consultants, local municipalities, and the motoring public. The portable photologs enables regional areas to utilize the photolog to answer basic trunkline questions at their desk by viewing pictures, as opposed to having to physically drive to the area of question to visually inspect. The photolog is used primarily by MDOT's development areas such as real estate, design, and traffic and safety.